

CLAIMS

1. A recombinant adenovirus comprising a mutation in the E1B-55K gene that encodes a mutated E1B-55K protein comprising a single amino acid mutation, said mutation substantially reducing the ability of said E1B-55K mutated protein to bind to the tumor suppressor p53.
2. A recombinant adenovirus as described in claim 1, wherein said virus is selected from the group consisting of Onyx 051 and Onyx 053.
3. A recombinant adenovirus as described in claim 2 wherein said virus is Onyx 051.
4. A recombinant adenovirus as described in claim 2 wherein said virus is Onyx 053.
5. A recombinant adenovirus as described in claim 1, wherein said virus has the further property of substantially retaining late functions of said virus.
6. An isolated adenoviral E1B-55K protein comprising a single amino acid mutation wherein said mutation is selected from the group consisting of amino acids at positions 240 or 260 of said protein.
7. An isolated adenoviral E1B-55K protein comprising a single amino acid mutation wherein said mutation is at position 240 of said protein.
8. An isolated adenoviral E1B-55K protein comprising a single amino acid mutation wherein said mutation is at position 260 of said protein.
9. An isolated polynucleotide wherein said polynucleotide comprises mutated adenoviral DNA that encodes a E1B-55K protein, said protein comprising a single amino acid mutation which mutation substantially reduces the capacity of said protein to bind to the tumor suppressor, p53.
10. An isolated polynucleotide as described in claim 9, wherein said polynucleotide is RNA.
11. A method of treating cancer in a patient in need of said treatment, comprising administering to said patient a dose of a recombinant adenovirus, said adenovirus comprising a mutation in the E1B-55K gene that encodes a mutated E1B-55K protein comprising a single amino acid mutation, said mutation substantially reducing the ability of said E1B-55K mutated protein to bind to the tumor suppressor p53,

1 and allowing sufficient time for said adenovirus to infect said cancer, and repeating said treatment if
2 desired.

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4 12. A method as described in claim 11, further comprising administering said recombinant adenovirus
5 with a chemotherapeutic.

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7 13. A method as described in claim 12, wherein said adenovirus is selected from the group consisting
8 of Onyx 051 or Onyx 053.

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10 14. A method of treating cancer in a patient in need of said treatment, comprising administering to said
11 patient a dose of an isolated polynucleotide wherein said polynucleotide comprises mutated adenoviral
12 DNA that encodes an E1B-55K protein, said protein comprising a single amino acid mutation which
13 mutation substantially reduces the capacity of said protein to bind to the tumor suppressor, p53, and
14 repeating said treatment if desired.

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16 15. A method of treating cancer as described in claim 14, wherein said polynucleotide is RNA.

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18 16. A method of treating cancer as described in claim 15, wherein said polynucleotide encodes said
19 E1B-55K protein and said protein comprises a mutation at position 240 of said protein.

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21 17. A method of treating cancer as described in claim 15, wherein said polynucleotide encodes said
22 E1B-55K protein and said protein comprises a mutation at position 260 of said protein.

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24 18. A method as described in claims 16 or 17, further comprising administering said polynucleotide
25 with a chemotherapeutic.

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27 19. A method as described in claim 15, wherein said polynucleotide is administered with a liposome.